UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2466

Ref: 8HWM-SM-TS

MEMORANDUM November 12, 1992

TO: Brian Pinkowski, RPM, 8HWM-SR

FROM: Dr. Gerry M. Henningsen, DVM, PhD, DABT & DABVT
Regional Toxicologist, 8HWM-SM-TS (ph. 294-7656)

SUBJECT: Analyses by Toxicologists of TAC Recommendations for Smuggler Mountain

Dr. Chris Weis and I attended the TAC (Technical Advisory Committee) meeting in Aspen, CO, Oct. 27-28, 1992, to present the major EPA technical viewpoints for evaluating health risks from the Smuggler Mountain NPL site. I have compiled a summary of the major technical findings and their likely impacts on similar Region 8 risk assessments.

Synopsis. The following toxicologic and risk assessment conclusions are made:

1. Under current site conditions, the **pathway of exposure** would be essentially broken by following the *conditional* TAC recommended public health actions, which were seemingly readily accepted by the community.

2. The **relevance to other Regional sites** would be *technically* minimal, since the TAC **emphasized** the unique site-specific aspects at Smuggler Mountain -- especially the **dichotomy** of *low blood lead near high lead soils*, which presently exists only at this site and at the Butte, MT, NPL site to a lesser degree. The Butte site is currently under review by the National Technical Review Workgroup for Lead.

3. The *public health* is **safeguarded** by the TAC decision within the scientifically defensible range of uncertainty, from toxicologic and health risk points of view; however, the permanence of the eventual remedy will depend on the reality of the **conditions cited** in the TAC recommendations.

4. It is my opinion that the 1986 risk assessment still adequately supports the TAC remedies, and perhaps it can be simply amended with the TAC final report. Certain assumptions are outdated, but they don't significantly change the risk outcome. How the TAC recommendations impact the existing Smuggler site remedy is beyond our scope of technical considerations, and becomes a site management concern.

5. The Region's and Agency's default action level for soil lead removal may be more openly contested and may require **additional data** to support clean-ups due to

unacceptable health risks. Several other Regional NPL sites may be impacted marginally by the TAC recommendations; however, as noted in #2 above, the TAC considered its findings as specific only for the Smuggler Mountain site due to the unique blood lead level dichotomy. As was starkly evident at the TAC meeting, adequate scientific studies (including total exposure assessment data gathering) with solid data to support EPA health risk policies are severely lacking today in this area. **Improved science** and **support for critical toxicologic data needs** are essential for EPA to do its job in our ever-rapidly evolving scientific and medical arena.

Presentations. The TAC heard one-hour presentations from both EPA representatives and Aspen representatives, as well as reading all pertinent published literature and reports. EPA presenters included Drs. Henningsen and Weis from EPA, Drs. Jeff Lybarger and Gina Terracianno from ATSDR, and Dr. John Drexler from the Univ. Colorado at Boulder. Aspen presenters included Dr. Bob Bornshein from the Univ. Cincinnati and Dr. Andy Davis from PTI, Boulder, CO. The TAC Chair was Dr. W. Chappell, and other members were Drs. M. Mortensen, P. Hammond, R. Chaney, I. Thornton & A. Stark.

Ground-rules. The TAC was asked to be objective and impartial, considering only the merits of the science based on **available data** and **current literature**. They were to try to come to a consensus regarding the **weight-of-evidence** for answers to the 3 questions posed. The TAC was also asked to focus on ***risk assessment*** (science) rather than risk management (decision) issues.

TAC recommendations. The TAC premised their decisions with some important points in the form of an overview for the answers given the three questions: (1) The decisions were made in light of technical **uncertainties**; and (2) They **emphasized** that their response was specific to the unique conditions at the site. The summarized answers were:

1. No current "realistic" health threat exists.

    a. The blood lead study, though flawed, provides the strongest evidence.
    b. Soil lead exposure is deemed insignificant, presently.

2. A low risk of potential future health threat exists.

3. Public health recommendations to minimize children's health risk from lead are:

    a. Blood lead surveillance should be regularly conducted.
    b. Cap, don't remove, berm soil and other bare ground areas.
    c. Use clean soil for gardens.
    d. Soil testing should be provided upon request.
    e. The City and County should oversee future site use.
    f. Results of the EPA-MSU swine bioavailability study should be considered for adjusting the potential health risk, when obtained.

Appraisal. The Regional toxicologists can only respond to the TAC process and to the preliminary decisions presented at the press release, and in more detail once the final report is submitted. The TAC was made fully aware of all EPA guidance, default risk assessment values, and reports; however, whether all TAC members thoroughly reviewed site data and EPA guidance is unknown. The TAC press release has some minor technical problems that should be avoided in the final report. We are going to relay those points to the TAC chair and recommend they also be relayed to the community (Tom Dunlop). Some specific contentions include: (1) "0" risk, as the TAC alluded, is a mathematical probability and does not exist since it is akin to quantifying infinity; (2) the "Berm" remedy goes beyond the TAC science review charge as it was stated, since it is more of an engineering option and it is not clear where the boundaries of the berm are or how such boundaries should be defined; (3) The "prediction" of children blood lead levels offered in the press release is inappropriately applied and it may have used wrong inputs via the UBK model; and (4) the blood lead surveillance recommendation does not agree with ATSDR's guidance, as the TAC apparently intended it to do; therefore, Dr. Lybarger is sending clarification on specific wording to be in line with the ATSDR policy. We believe that both EPA and Aspen should have an opportunity to review a final draft report to ensure that no unintentional faults are present that may cause a large and formal opposition to the report.

During the TAC meeting, the major EPA premises presented for the existance of an unacceptable health risk from exposure to soil from the Smuggler Mountain NPL site included: (1) high residential soil levels of lead, averaging $\approx$4000 ppm and 12000 ppm in the berm area with a high of 65000 ppm; (2) highly "bio-accessible" forms of soil lead, primarily cerrusite with a large fraction of $<$10 um diameter sizes; (3) lack of confidence in single limited blood tests in children, since the variability of multiple and complete blood testing is uncertain and the relevance to recent exposures is less than to past exposures (the TAC believed, however, that this blood sampling period represented the worst-case exposure scenario; and (4) the recent findings of detrimental health effects in children having blood lead levels as low as 7 ug/dl, in studies that were not designed to seek a threshhold of lead-induced pathology. The Aspen representatives tried to interpret the blood lead study as being definitive and conclusive for protected health and that no risk exists; they also tried to extrapolate to the Butte, MT, site and tried to refute (weakly, though) the relative bioavailability studies. Our impression was that the TAC simply placed the greatest weight on the blood lead results, even though it was a compromised (lack of solid exposure data) screening study on only a portion of the exposed children. Much more data would be needed to thoroughly resolve the scientific issues and theories regarding the soil lead hazards.

The RPM's stated pre-TAC goal was achieved, since "BREAK THE PATHWAY OF EXPOSURE" was recommended by the TAC and apparently readily accepted by Aspen. We feel that EPA Regional and certain HQ staff should retreat to discuss this site to improve future Superfund activities so that similar 10-year prolongations don't recur. Again, we strongly feel that toxicology data needs (improved science) are critical to supporting EPA policies for current and future NPL sites; especially, early and adequate resources should be committed with senior staff support resulting from appropriate professional input.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
215 NORTH 17TH STREET
OMAHA, NEBRASKA 68102-4978

REPLY TO
ATTENTION OF

September 30, 1992

Hazardous & Toxic Waste Branch

Mr. Brad Bradley (5HS-11)
U.S. EPA, Region V
Ralph Metcalf Building
77 W. Jackson Boulevard
Chicago, Illinois 60604

Dear Mr. Bradley:

This letter will acknowledge your instructions to our Technical Manager, Mr. Eugene Liu, requesting that the concept design for the NL/Taracorp Superfund Site not be distributed to reviewers. We will do so and await further direction from you. Mr. Liu's memorandum is enclosed for your information.

We will also have our Contractor take another round of water sampling and forward the results to you.

If you have any questions on this information, please call the Project Manager, Mr. John Cataldo, at (402) 342-9423 or the Technical Manager, Mr. Eugene Liu, at (402) 342-0051 ext. 7683.

Sincerely,

KATHRYN M. SCHENK, P.E.
Chief, HTW Branch
Programs & Project Management
Division

Enclosure

CEMRO-ED-ED (200) 29 September 1992

MEMORANDUM FOR CEMRO-MD-HS (Cataldo)

SUBJECT: Concept Remedial Design, NL Industries, Granite City, Illinois

1. Reference is made to a telephone conversation between Mr. Brad Bradley of EPA, Region V and me regarding the submission of concept design for the landfill at the Industrial Site. Mr. Bradley informed me that due to groundwater contamination, the concept design may be obsolete and need not be submitted at this time. Mr. Bradley requested that the USACE direct our Contractor to take another round of water sampling, and the existing Record of Decision may require re-evaluation. Mr. Bradley also indicated that $2,000,000 was the maximum level of funds available for the Rapid Response Action at this time. I indicated to Mr. Bradley that I would pass on the information to the appropriate staff elements. I also indicated to Mr. Bradley that we would proceed with the groundwater sampling as soon as possible.

2. If you have any questions, please contact me at ext. 7683.

EUGENE J. LIU
Technical Manager
Technical Management Section D

End